

found to render pelvic version easier when required to be done by introducing the hand into the uterine cavity."

For the replacement of prolapsed hemorrhoids and rectal prolapsus, the advantages of this position are at once apparent, and since the warm air of the intestine tends toward the anus when the patient is on knees and elbows with elevated pelvis, this posture suggests itself as useful in cases of colic connected with excess of intestinal gas.

There are many other uses of this posture which will occur to the practitioner if the indications which it fulfils are not forgotten. This paper is intended to bring prominently forward the advantages of a resource which is frequently overlooked, but is not a compendium of all its uses. Like Ophelia's rosemary, it is "for remembrance."

Whenever we wish to reverse the usual action of gravity upon the contents of the abdomen or pelvis, or to remove from the pelvic organs the ordinary pressure of superjacent viscera, this posture should be borne in mind.

ART. X.—*Description of a New Forceps.* By ALEX. McBRIDE, M.D.,
of Berea, Ohio. (With four wood-cuts.)

To alleviate and abridge human suffering and to increase the sum of human life are the cardinal objects of the physician's labours. Dr. Paul Chamberlain, by his invention of the obstetric forceps, made a notable advance towards these objects; and whoever improves this instrument so as to extend its usefulness makes some advance in the same direction. This I have endeavoured to do by attempting to make the instrument less objectionable in appearance, more easy of application, and diminishing its liability to do harm.

All, or nearly all, the forceps which I have seen seem to me to possess one or more of the qualities of frightfulness, awkwardness, inefficiency, or destructiveness.

The first object I had in view was to divest the forceps of their uncouth or frightful aspect. To accomplish this the instrument must be shorter, lighter, and present a less "martial" appearance. The handles could not consistently be shortened and maintain the same length of shanks, and shortening of the latter was not admissible unless a joint or lock could be contrived which was not liable to pinch. At this point my labour began. To effect that object I have contrived a convenient and secure lock which cannot pinch under any circumstances. I have reduced the shanks to two

¹ A much venerated teacher, before proceeding to demonstrate the long forceps, always expressed regret that the instrument had such a "martial appearance."

inches, the handles to three and a half inches, thus making an instrument, the entire length of which, in a right line, is $11\frac{1}{4}$ inches, capable of being used at the upper strait. To this I have added adjunct handles which, when used for difficult cases, increase the entire length to $15\frac{1}{4}$ inches.

The next point to be attained was to produce a blade with all the facility for grasping and traction which pertains to the best instruments in use, such as Davis's and Hodge's, and to lop off redundancy, all that might interfere with its perfect ease and safety of application. Now, when traction is made, no part of the instrument touches the head except that portion of the blades which is forward of the point of greatest expansion. Hence it is plain that no width of blade posterior to that point can make any difference in the safety and facility of extraction or firmness of hold. But it is easy to comprehend that a considerable width of this portion of blade may interfere seriously both with the safety and ease of introduction. With these views of the case, I have given my blades ample width ($1\frac{7}{8}$ inch), from near the tips to a point $3\frac{1}{4}$ inches from the tips, in a right line, and from this point they rapidly decline in width to the shanks. This wide portion of the fenestra admits of the protrusion of the parietal protuberances, retaining all the advantages of the wide blades of Davis and Hodge, and discarding the disadvantages of their width of heel portion. The length and cephalic curve of this portion of the blades are such that the tips can never endanger the perineum by extending beyond the chin, their maximum extent being $3\frac{1}{4}$ inches from the parietal protuberance, which can never reach the chin.

To improve the pelvic curve was another point of consideration, so that when the blades are on the head at the upper strait, the shanks or handles shall be in the centre of the os externum. The reason for this is twofold: first, the better to preserve in the mind the position of the head, and the true line of motion; second, to avoid the pressure of the handles against the perineum, and in many cases to avoid the necessity of moving the patient from her dorsal position in bed. To accomplish this I have commenced the pelvic curve at the joint, so that the axial curve is uniform from the joint to the tips of the blades, thus increasing the length of the ordinary curve two inches, and rendering the curve of the blade more gentle than in many instruments; this has the effect to throw the handles more forward, and in effect to increase their length about one inch. The curve is an arc of a circle whose radius is nine inches, projected from a line perpendicular to the joint, and supposed to be very nearly the average curve of axis of pelvis. With these conditions the short instrument can be easily applied at the upper strait and give sufficient projection of handles to afford a good hold.

But to provide for those cases in which much leverage, traction, or rotation is required, I have provided supplemental handles. When these are inserted we have a veritable long forceps of about the usual length, each

branch as firm as if it were one solid piece. And here I have innovated; the adjuncts curve downward nearly as much as the blades curve upward; at least the point of traction near the end of adjunct is about the same distance below the joint, or axis of the handles, as the point of resistance is above (which is a point about $1\frac{1}{2}$ inch forward of the point of widest expansion). This arrangement gives us the advantage of making traction directly in the line of motion during the entire passage of the head, without distracting the attention or requiring a hand to make downward pressure on the shanks or handles. Another advantage of the downward curve is that it affords a lever of three inches in length for rotation; this peculiarity of the instrument pertains to no other in use, Hodge's handles curving downward in only a slight degree.

We have, then, in this instrument, all the advantages of both a long and a short forceps, without the disadvantages of either. The short instrument has the advantages of lightness, portability, mildness of appearance, and in its application does not confuse by length and weight of handles. The long instrument has the single advantage of greater power. My short instrument will answer in all cases not requiring great power of traction or rotation. It is my method to begin all operations with the short instrument; then to attach the adjuncts when required. They can be inserted in less time than is required to take from the pocket and put on a pair of spectacles.

It is not my design to criticize other forceps, but the observer will perceive that the length of the blade and cephalic curve are such that when the head is grasped ($3\frac{1}{2}$ inches), the tips will approximate to $1\frac{3}{4}$ inch, and will be nearly $\frac{1}{2}$ an inch from point of chin. The measurement of width of chin is about $1\frac{1}{2}$ inch; therefore this instrument will hold more firmly than one whose tips are 2 inches apart when the head is grasped. The more accurate the fit, the less pressure is required for extraction.

My instrument when short has a grasping or crushing power, as compared with Hodge's instrument, of .737 to 1.172, being less. When long, as 1.473 to 1.172, being more; but as it has a crushing latitude of only $\frac{1}{2}$ inch on the average head, no inconvenience or damage can result from this cause. Hodge's instrument has a crushing latitude of 1 inch, its width, when closed, being but $2\frac{1}{2}$ inches.

Some practitioners may fail to perceive the full importance of having the forceps dual, or short and long. I think with the truly humane it must ever be a maxim to not only spare the patient all unnecessary danger and physical pain, but all mental and moral shock; hence, the less alarming the appearance of the instrument, the better. And if the maxim of Hodge be acted upon, that "the forceps ought to be applied and used without the consciousness of the patient," the instrument of $11\frac{1}{4}$ inches length and 11 ounces weight could be concealed more easily than one of

16 inches and 17 ounces. The adjuncts can be added without bustle or noise.

The teachers from whom I derived my early maxims in obstetrics rather discouraged the frequent use of forceps, and with some reason, when we consider the kinds of instruments that were in use thirty years ago, also most of those in use now. But I think if this instrument were in the hands of every practitioner, they would overcome their timidity of using forceps, and a vast amount of suffering would be spared. The instrument itself has no injurious property; the only conditions necessary to make its use entirely safe are, that there shall be sufficient relaxation, and that the head shall properly present.

The blades and shanks being so nearly of the exact curvature of the pelvis, and this curve extending clear to the joint, there can be no uncertainty as to the direction for traction; all one has to do is to move the blades in the line of their own curvature, and it is the same whether the instrument is used long or short. When the adjunct handles are used, they antagonize the upward curve of the blades so exactly that full tractile force can be exerted in the exact line of motion.

The construction of the shanks, joint, and handles, differs from other instruments in this: that the shanks and handles are about $\frac{5}{32}$ of an inch apart, and touch each other nowhere except in the socket and at the end of the handles; thus, pinching is impossible. The joint has all the facility for junction and disjunction of the English joint, and all the security of the German or French. I have used the instrument nearly two years, both at lower and upper strait, and find it to answer fully my expectations. It will rarely be necessary to change the position of the patient in bed from the dorsal.

Measurements.—The figures represent the instrument.

Figure 1. Length, a, b , $11\frac{1}{4}$ inches in right line; a, c , 6 inches; a, d , $3\frac{1}{4}$ inches. Width, e, f , 3 inches. Shanks, c, g , 2 inches. Handles, g, b , $3\frac{1}{2}$ inches. Between tips, h, h , $\frac{7}{8}$ inch. Thickness of limb at e, f , $\frac{5}{32}$ d of an inch. Distance between handles at joint about $\frac{5}{32}$ d of an inch.

Figure 2. Length, a, b , in right line $15\frac{1}{4}$ inches; a, c , 6 inches; a, d , $3\frac{1}{4}$ inches. Width, e, e, e, e , $1\frac{7}{8}$ inch. Width of limb $\frac{3}{8}$ inch. Width of fenestra $1\frac{1}{8}$ inch. Limbs bevelled on outer edge of pelvic surface.

Figure 3. Adjunct handle, same as f, b , Fig. 2.

Figure 4. Opposing face of adjunct handles, showing mode of locking. The highest point of tips rises $3\frac{1}{2}$ inches above axis of handles.

The points of advantage claimed for this forceps over all others, leaving all the old short forceps out of the question, are,

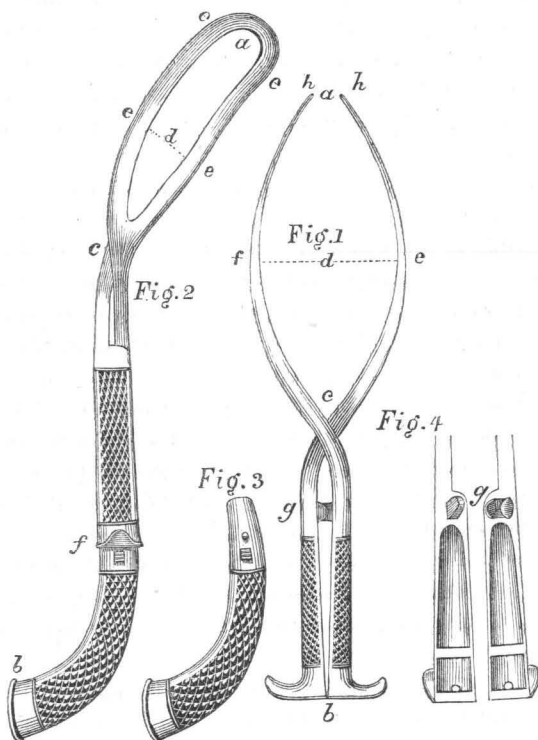
1st. More easy of introduction and application to the head by reason of the improved pelvic curve, the shape of the blade, and the absence of long and heavy handles.

2d. Facility for making traction direct in line of motion.

3d. Facility for rotation by reason of downward curve.

4th. Entire exemption from pinching, either by joint or shanks.

5th. The proper length of anterior portion of blades; the absence of unnecessary width or thickness of any part of blades, and the perfection of pelvic curve extending from joint to tips; rendering it less liable to do harm.



6th. Less frightful or momentous in appearance; the short form being the only one brought to view of patient or attendants. (It is as necessary to conserve the equanimity of attendants as patient.)

7th. More conveniently portable.

8th. Facility of joint for locking, unlocking, and security.

9th. The shortness and lightness of the handles (in the short form, which is always used in introduction) give a finer sense of touch and direction of blades.